

**PATENT APPLICATION****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q65162

TetsuyaTOSHINE, et al.

Appln. No.: 09/885,944

Group Art Unit: 1756

Confirmation No.: 6218

Examiner: ANGEBRANNDT, Martin J.

Filed: June 22, 2001

For: HOLOGRAM TRANSFER FOIL

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Hiroyuki Ohtaki, hereby declare and state:

I am a citizen of Japan.

I graduated from the Engineering Department of Tokyo University of Agriculture and Technology in March 1994 and from the Engineering Department of the post-graduate school of Tokyo University of Agriculture and Technology in March 1996.

I have been employed by Dai Nippon Printing Co., Ltd., since 1996, working with the Central Research Center from April 1996 to March 2001 and in the Technical Development Center from April 2001, to present.

I am familiar with the above-identified application and the following experiments were conducted by me or under my direct control and supervision.

The following results from a comparative experiment between the hologram of Example 1 of the present invention and a comparative example are provided to establish that the present invention provides unexpectedly superior results over the prior art.

Declaration Under 37 C.F.R. § 1.132
U.S. App. Ser. No. 09/885,944

Atty. Dck. No. Q65162

The hologram transfer foil of Example 1 of the present specification was constructed from a laminate structure composed of the releaseable sheet 7/heat seal layer 3/ volume hologram layer 2/ thermoplastic resin layer 4/ surface protective layer 5/substrate 6. The hologram transfer foil of the comparative example differs only in that the thermoplastic resin layer 4 was replaced by a toluene solution coating layer.

The third film in Example 1 (i.e., thermoplastic resin layer 4) was prepared by coating of a solution of 60 parts by weight of a water-soluble heat-sensitive adhesive (EC1700 made by Chuo Rika Co., Ltd.) dissolved in 40 parts by weight of water.

With respect to the comparative example, as in Example 1, a hologram transfer foil was prepared except for using, instead of the thermoplastic resin layer in the third laminated film of Example 1, a comparative third laminated film obtained by coating of the "solution of 50 parts by weight of an ethylene-vinyl acetate copolymer (AD1790-15 made by Toyo Morton Co., Ltd.) dissolved in 50 parts by weight of toluene" as set forth in conjunction with the laminated film b in Example 7. Therefore the comparative example comprises adhesive layers 5' and 5" disclosed in Morii.

The obtained hologram transfer foil was found to have a diffraction efficiency of 85.2% and a peak wavelength of 513 nm. As in Example 1, the hologram transfer foil was allowed to stand alone at room temperature for 7 days to again evaluate the optical properties. As a result, it was found to have a diffraction efficiency of 83.1% and a peak wavelength of 491 nm indicative of a large shift.

The above establishes that the influences on hologram recording are brought about by the migration of low-molecular-weight components between the surface protective layer formed

Declaration Under 37 C.F.R. § 1.132
U.S. App. Ser. No. 09/885,944

Atty. Dck. No. Q65162

by coating as well as the thermoplastic layer and the volume hologram layer. Further, it is shown that the thermoplastic resin layer 4 formed by the use of an organic solvent does not function as a barrier layer. Thus, I conclude that the present invention provides unexpectedly superior results as compared to the prior art.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 07/14/2005

Hiroynuki Ohtaki
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